

**REMARKS**

Claims 1, 10, 11, 21, 22, 25 and 27-31 are rejected under 35 U.S.C. §102A as being anticipated by Humphrey (2002/0129116 A1). The Examiner states that regarding Claims 1 and 25, Humphrey teaches a data transmission system comprising: a terrestrial communication link (Fig.2, item 20 communicates with item 25); a two-way communication link (i.e., for the providers or clients to transmit and receive data, page 4, sections 0043-0044) comprising at least one satellite (24); at least one user terminal (i.e., client 25) having two-way communication with the two-way communication, and comprising a cache for selectively caching data broadcast by way of the satellite of the two-way communication link (i.e., client can transmit via transmitter (23) and receive via receiver (26) and include cache memory (28) to store requested program, page 4, sections 0043-0046; a software which retrieves information requested by way of the user terminal and information related to the requested information (i.e., typically the requested information is received if appropriate application is in client unit to receive it, page 4, sections 0046-0047); and at least one gateway (broadcasting system (20)) having access to data and having two-way communication with the two way communication link (page 4, sections 0046-0047).

Applicants respectfully submit that in Humphrey, U.S. Patent App. No. 2002/0129116 A1, filed March 15, 1999 entitled Network Broadcasting System and Method of Distributing Information from a Master Cache to Local Caches, there is disclosed a comprehensive global information network broadcasting system and implementation thereof designed to be used to provide a plurality of, what is commonly referred to as, Internet service providers with updated information through the use of high speed satellite links directly to the local Internet service provider from a centralized location. The satellite broadcasting system is combined with servers known as caching or proxy servers located at the client site which serve to store web and other data until the end user needs to access the data and a master cache center which coordinates the selection and transmission of information to those client sites via the satellite broadcasting system. The caching of data objects as close to the end user as

possible will require less data to transit the backbones networks. The client site cache communicates to the master cache center via a connection to the Internet and the client site cache receives from the master cache center via the satellite broadcasting system and, in some cases, the Internet connection. Upon the receipt of a request from an Internet service provider, the information at the master cache will be transmitted from a ground station to a satellite and will be broadcast to all receiving Internet service providers using the broadcast system which overlays a capability onto the existing Internet that will allow real broadcast so that the data object can be transmitted once and received at all subscriber locations. Internet service providers will need to subscribe to the service to be able to receive these satellite transmissions, and in order to register their cache misses which is a way in which a subscriber indicates interest in a data item. A method of implementing this is disclosed using software for updating and optimizing of the local cache sites and capturing and processing the information through the receivers.

Applicants respectfully submit that at page 4 of said reference at sections 0043 and 0044 it is stated that [0043] "An embodiment of the comprehensive Internet broadcasting system (20) is shown in FIG. 2. The system may be comprised of a master cache center (21) that is operationally connected to the Internet (22) and a satellite uplink transmitter (23) that may, in turn, uplink data to a geosynchronous satellite (24). Typically, four geosynchronous satellites are employed to effect planetary coverage, low and near earth orbiting satellites, however, are within the scope of the present invention. The uplink transmitter (23) may be duplicated for each of the geosynchronous satellites employed for coverage. Thus, a land line, not shown, may transport the present data to a remote uplink site to provide access to other satellite regions."

[0044] "The system may have a plurality of clients comprising Internet service providers or customers. Each of the clients may have a local cache system (25 through 25c) which may be comprised of a satellite broadcast receiving system (26 through 26c), a cache adapter (27 through 27c) and a cache (28 through 28c). The cache (28 through 28c) may have a cache disk or

cache storage device (29 through 29c) for the storing of information and data received from the Internet or the broadcast system."

Applicants respectfully disagree that satellite (24) "having two-way communication with the two-way communication" and "at least one gateway (broadcasting system (20)) having access to data and having two-way communication with the two-way communication link (page 4, sections 0043-0046)." Nowhere in sections 0043-0046 on page 4 of said reference is there disclosed or implied that satellite uplink (23) has two-way communication capability with satellite (24) and moreover, as the Examiner admits ("i.e., client can transmit via transmitter (23) and receive via receiver (26)..."") as set out at page 4, sections 0043-0046. Nowhere is there described the two-way communication link clearly set out in Applicants' application as illustrated in Fig. 3 of the instant application wherein transmit/receiver (120) comprising the service area network including the master cache clearly having two-way communications with satellite (11). This is set out in Applicants' specification on page 11, line 3-7 wherein it is stated "The satellite transmitter/receiver (123) or router (123) receives requests from and transmits requested information to a satellite (11), such as a geosynchronous satellite (11), for example. Four geosynchronous satellites (11) effectively cover the Earth. Requests may also be received by way of the Internet (21)."

Further, nowhere in page 4, sections 0046-0047 is a two-way link from a satellite (11) to a gateway (16) seen as is required in the claims of the instant invention. Applicants respectfully submit that this feature is in Fig. 3 and further supported in the specification *inter alia* at page 7, lines 7-13.

Likewise, it is stated on page 11, lines 9-12, "Each of the clients (125) has a local proxy server (127-127b) that is coupled to a satellite broadcast transmitter/receiver system (126-126b). The local proxy servers (127-127b) each have an intelligent or smart local cache (128-128b) for storing received information."

Thus, Applicants respectfully submit that in their specification at these recited passages it is clearly seen that transmitter/receiver (125) has two-way communication links with satellite (11). This is clearly contrasted with the uplink and downlink as shown in Fig. 2 of the reference wherein (23) is clearly seen to

be the satellite uplink to satellite (24) and (26) is seen to be the satellite broadcast receiving link. There is, therefore, clearly not seen to be two-way communication capability between satellite uplink (23) and satellite (24) and between satellite broadcast receiver (26) and satellite (24) as set out in the invention of the instant application.

The Examiner goes on to state that regarding claims 11, 28 and 29, Humphrey discloses a method of communication data comprising the steps of providing one or more orbiting satellites (24) that comprises a two-way communication link (i.e., satellite (24) transmits and receives data via (20) and (25)); providing at least one user terminal (i.e., client or customer) having two-way communication with the two-way communication, and comprising a cache for selectively caching data broadcast by way of the satellite of the two-way communication link (i.e., client can transmit via transmitter (23) and receive via receiver (26) and include cache memory (28) to store requested program, page 4, sections 0043-0046); a software which retrieves information requested by way of the user terminal and information related to the requested information (i.e., typically the requested information is received if appropriate application is in client unit to receive it, page 4, sections 0046-0047); and at least one gateway (broadcasting system (20)) having access to data and having two-way communication with the two-way communication link (page 4, sections 0046-0047); generating requests for data at the at least one user terminal (i.e., customer sends a request, page 4, section 0046); transmitting the requests for data from the at least one user terminal by way of the two-way communication link to the at least one gateway (page 4, section 0046); obtaining the requested data at the at least one gateway (i.e., master cache obtains the requested information, page 4, section 0047); and transmitting the requested data from the at least one gateway to the at least one user terminal by way of the two-way communication link (page 4, sections 0046-0047).

Again, Applicants respectfully submit that nowhere in the recited sections is there seen a two-way communication link between labeled satellite uplink (23) and satellite (24) or satellite broadcast receiver (26) and satellite (24) as is set out in the instant invention wherein in Fig. 3 there is seen a satellite (11) which has a two-way communication link with both

transmit/receiver (120) comprising the server area network master cache and transmitter/receiver (125) comprising the smart cache.

Regarding claim 21, the Examiner states that Humphrey teaches obtaining the requested data along with data related to the requested data at the at least one gateway, and transmitting the requested and related data from the at least one gateway to the at least one user terminal by way of the two-way communication link (page 4, sections 0044-0041 and 0046-0047).

Applicants respectfully submit that the teachings of these recited passages in Humphrey do not teach obtaining the requested data along with data related to the requested data at the at least one gateway and transmitting the requested and related data from the at least one gateway to the at least one user terminal by way of the two-way communication link. Nowhere in the Humphrey publication is there taught a gateway having two-way communication links with a satellite as in the invention of the instant claims illustratively set out in Fig. 1 of Applicants' specification where user 30(a) has two-way communication to satellite (11), and gateway (16) has two-way communication links with satellite (11) (both depicted by the serpentine lines).

The Examiner goes on to say that regarding Claim 22, Humphrey teaches storing the requested and related information at the Internet broadcasting system (page 4, sections 0043 and 0047).

Applicants respectfully submit that in Humphrey at page 4, section 0043 there is stated "The system may be comprised of a master cache center (21) that is operationally connected to the Internet (22) and a satellite uplink transmitter (23) that may, in turn, uplink data to a geosynchronous satellite (24)..."

In 0047, there is stated, "The master cache (21) may obtain the requested information or data from a source (30) via the Internet (22)...The master cache (21) may assign a priority to the information based upon the levels of interest and a predetermined transmission formula as described below...The cache adapters (27 through 27c) may then formulate a user request for the data for the local cache (28 through 28c) to find the information. This action may cause the local cache (28 through 28c) to search for the data. This time, the local cache may find the information or data at the cache adapter

(27 through 27c). The local cache (28 through 28c) may then transfer and store the information on the cache storage disk or storage device (29 through 29c)."

Applicants respectfully submit that nowhere in Humphrey at sections 0043 or 0047 at the pertinent recited passages above or elsewhere is there found a teaching that the requested and related information is stored at the Internet broadcasting system, as contended by the Examiner, since nowhere is related information recited in said passages. Further, Applicants respectfully contend that Claim 22 calls for storing the requested information at the at least one gateway which has two-way communication links with the satellite, not the Internet broadcasting system which merely has an uplink to the satellite and a downlink to the user.

The Examiner goes on to say that regarding claims 10, 27 Humphrey teaches the gateway (or Internet broadcasting system) comprises a cache (page 4, section 0046).

Applicants respectfully submit that in Humphrey at section 0046 there is described "the improved system may function by a customer (31) of the Internet service provider sending a message or a URL request to the local Internet service provider's cache system (25) requesting information or data. The Internet service provider's cache (28) may determine whether it has the current version of the information or data stored on its cache. The cache (28) may then check whether the information or data is located in the cache adapter (27). The cache adapter in this illustrative example does not have the material because it does not yet store the information. The cache adapter (27) responds negatively to the request notifying the cache 28 to search elsewhere. The local cache (28) may then search other caches or the Internet for the requested information. The cache adapter (27) may send a message over the Internet to the master caching center (21) reporting the "miss" of the requested information. The master cache (21) may then record the information regarding the cache miss and measure the amount of interest in the information or data from the local caching systems (25 through 25c). The master cache (21) may employ a variety of methods described further below to determine at what point the level

of interest is sufficient to broadcast the information or data to the Internet service providers caches."

Applicants respectfully contend that nowhere in Humphrey at page 4, section 0046 is there taught a gateway which comprises a cache, but merely a teaching that an Internet broadcasting system may have a cache and a master cache along with a cache adapter. This teaching does little to cure the major deficiency of providing a gateway with two-way communications to the satellite as stated above.

The Examiner goes on to state with regard to claims 30-31, Humphrey teaches the cache has a size on the order of 30 gigabytes or multi-gigabyte hard disk (i.e., inherently present in aggregating cache community size, page 3, section 0028).

Applicants respectfully submit that Humphrey at page 3, section 0028, teaches "a method for combining the capabilities of satellite communications and caching servers to overcome the disadvantages of each and, at the same time, improve the levels of hit rate that may be achieved by caching servers thereby saving bandwidth and other valuable resources within the Internet and other data networks which can use these technologies. This invention, *inter alia*, further teaches how to construct a selection system which uses **one-way satellite communications** [emphasis added] in order to build a true broadcast capability as an addition to the existing point to point Internet network, and to use this broadcast capability to aggregate the cache community size, thus increasing the hit rates of caches on all caches which subscribe to the service without regard to a number of members of the individual cache server cache community size.

Applicants respectfully contend that Humphrey, at page 3, section 0028, nowhere teaches that the cache has a size on the order of 30 gigabytes or multi-gigabyte hard disk and this is not seen to be inherently present in aggregating cache community size, as the Examiner contends.

Further, at the recited section 0028, it is clearly stated that the Humphrey invention is directed to improving the levels of hit rate that may be achieved by caching servers to save bandwidth and other valuable resources within the Internet among others.

Applicants respectfully submit that Humphrey thereafter teaches in said section that "this invention, inter alia, further teaches how to construct a selection system which uses one-way satellite communications in order to build a true broadcasting capability", not a two-way communication capability with a satellite as required in the claims of the instant invention.

The Examiner has rejected claims 2-8, 12-20 under 35 U.S.C. 103(a) as being unpatentable over Humphrey (2002/0129116 A1) in view of Yee et al (U.S. Patent No. 6,151,497).

The Examiner states that regarding claims 2 and 4, Humphrey discloses all the limitations above except the two-way communication link comprising a low bandwidth two-way communication link and a high bandwidth data broadcast link.

However, the Examiner reasons, that a two-way communication link comprises a low bandwidth two-way communication link and a high bandwidth data broadcast link which are known in the art of communications. The Examiner goes on to state, that Yee et al teaches subscriber unit processes that request and send it to a satellite communications system over a low bandwidth message link (56) (col.3 lines 43-50), and the satellite transmits the requested data information to subscriber over high bandwidth link (58) (col. 3, lines 20-22 and col. 3, lines 42-59). Therefore, the Examiner concludes, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to implement the techniques of Yee et al within the system of Humphrey in order to configure the subscriber unit to transmit data requests over a low bandwidth data channel to satellite communications network, using data messaging link (56) (i.e., low bandwidth) to send and receive small amounts of data such as notification, acknowledgement, etc., and broadcast large amount of data and the requested data information over high bandwidth.

Applicants respectfully submit that in Yee et al there is taught a satellite based broadcast data communications service for a satellite communications system which is presented allowing a data information service provider (40) to send large blocks of data information to mobile subscriber units (50). A satellite gateway (30) is coupled to a service provider (40) via a ground link (42) and to a satellite communications network (10) via a gateway link (36). A mobile

subscriber unit (50) is coupled to the satellite communications network (10) via both a message link (56) and a high-speed high-bandwidth downlink (58). The mobile subscriber unit sends a data request for requested data information to service provider (40) via message link (56), satellite communications network (10), gateway link (36), gateway (30), and ground link (42). Service provider (40) responds by retrieving and sending the requested data information to the requesting subscriber unit (50) via ground link (42), gateway (30), gateway link (36), satellite communications network (10), and high-speed high-bandwidth downlink (58). Service provider (40) sends a set of standard data information to the satellite communications network (10) to be broadcast over the high-speed high-bandwidth downlinks (58). Each subscriber unit (50) receives the broadcast standard data information, preferably only those portions for which the subscriber unit (50) has access authorization. The satellite based broadcast data communications service provides for data requests, data delivery, data access control, delivery priority, and billing for use of the system.

Applicants respectfully submit that in Yee et al, as may clearly be seen in Fig. 1, gateway (30) has one-way communication with satellite (10), not a two-way communication link as required in the claims of the instant invention and in claim 2, again, there is confirmation that gateway receiver/transmitter (38) has one-way communication link (36) and not two-way communication as required in the claims of the instant invention. Applicants respectfully direct the Examiner's attention to Fig. 1 of the instant application where it is clearly seen that gateway (16) has two-way communication link with satellite (11) as opposed to the one-way communication link as set out in Fig. 1 and 2 of the Yee et al patent.

The Examiner goes on to state that regarding claims 3 and 5-8, Humphrey in view of Yee et al discloses the system recited in claims 2 and 4, but fails to teach a particular communications frequency band. However, the Examiner takes Official Notice that the Ka-band and Ku-band are common in satellite communication, and further, well known to involve spot beams to cover a selected area. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention for Yee et al to use the particular band appropriately, in order to timely implement the satellite

system based on already existing technology and government policy in practice.

Applicants respectfully submit that although they do not agree with the Examiner's conclusion with regard to the particular band used, again nowhere in Yee et al is there found a two-way communication link between satellite (10) and gateway (30) which is clearly distinguishable from the claims of the instant invention as explained above.

The Examiner goes on to state regarding claims 12-16, Humphrey discloses the method recited in claim 11, wherein the step of transmitting the requests for data comprises transmitting the requests for data by way of satellite, terrestrial, and wireless communication link (page 4, sections 0044-0047).

Applicants respectfully submit that in said section 0044, it is stated that clients may have a local cache system (25 through 25c) which may be comprised of a satellite broadcast receiving system (26 through 26c)...

Further, Applicants respectfully submit that in 0045 it is stated that "the system of the present invention may also be employed over high speed land lines and wireless terrestrial links."; whereas, in sections 0046 and 0047 the functions of the various caches employed are discussed with regard to reporting the miss of requested information and locations in the cache system where information may be found.

Applicants respectfully submit that nowhere in these recited sections is there disclosed transmitting the request for data from the at least one user terminal by way of a two-way communication link to the at least one gateway.

The Examiner goes on to state that regarding claim 17, Humphrey discloses all the limitations except wherein the step of transmitting the requested data comprises transmitting the data by way of a high bandwidth data broadcast link (col. 3, lines 42-59). The Examiner goes on to state that, however, transmitting the data by way of a high bandwidth data broadcast link is known in the art of communications. The Examiner states that Yee et al teaches that the satellite transmits the requested data information to subscriber over high bandwidth link (58) (col.3, lines 20-22 and col. 3, lines 42-59).

Therefore, it would have been obvious, according to the Examiner, to one of ordinary skill in the art at the time the invention was made, to implement the techniques of Yee et al within the system of Humphrey in order to broadcast large amounts of data and the requested data information over high bandwidth.

Again, Applicants respectfully submit that in the recited sections set out by the Examiner there is nothing more disclosed than requests at a low bandwidth with broadcast at a high bandwidth, and nowhere is anything more than a one-way data link (36) between gateway (30) and satellite (10) as seen in Fig. 1 of Yee et al disclosed as opposed to the two-way link as required in the claims of the instant invention.

The Examiner goes on to say that regarding claims 19, 20, Humphrey discloses all the limitations except the step of obtaining the requested data at the at least one gateway using a user's request history to obtain the requested information. However, the Examiner contends, that the preceding limitation is known in the art of communications. The Examiner further states that Yee et al teaches the gateway comprises a processor that keeps track of data requests in controlling communication (col. 4, lines 19-22), and the gateway is in communication with a billing function to generate data related to specific subscriber unit usage, which reads on the step of obtaining the requested data at the at least one gateway comprising using a user's profile to obtain the requested information (col. 3, line 65 to col. 4, line 58). Therefore, the Examiner concludes, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to implement the technique of Yee et al within the system of Humphrey in order that the same data information can be broadcast by multiple satellites over multiple high bandwidth downlink to cover the location of all addressed destination subscriber units.

Applicants respectfully submit that Yee et al at col. 4, lines 19-22, there is disclosed a "gateway control processor (32) keeps track of data information requests and pre-scheduled data transmissions and the scheduling priorities assigned to each." Further, at col. 3, lines 65 to col. 4, line 58, it is stated "gateway (30) is in communication with a billing function (34) over link (46) to generate billing data for service provider (40) indicating the request and

delivery of specific information to a particular subscriber unit (50)...Each satellite (20) in satellite communications network (10) includes a crosslink transceiver (21), a router controller (23), a message link transceiver (27), and a gateway transceiver (29). Router controller (23) manages inter-link communication and data routing over and between inter-satellite crosslinks (12), gateway links (36), data messaging links (56), and high bandwidth downlinks (58). Crosslink transceiver (21) transmits and receives data packets over crosslinks (12). Gateway transceiver (29) transmits and receives data packets over gateway links (36). Message link transceiver (27) transmits and receives data packets over messaging links (56).

Applicants respectfully submit that although they do not understand how, in said passages, that the requested data at at least one gateway uses a user's request history to obtain the requested information, as contended by the Examiner, again, claims 19 and 20 are patentably distinguishable over Humphrey and Yee et al in any combination since these recitations do little to overcome the deficiency of the absence of a two-way communication link between gateway (30) and satellite (10) as recited above in Yee et al as well as Humphrey.

Applicants gratefully acknowledge that claims 23-24, having been objected to as being dependent upon a rejected base claim, would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicant has presented claims in accordance with the Examiner's comments and respectfully requests that they be allowed.

The Examiner goes on to say that it is the Examiner's statement of reasons for allowance of these claims: the prior art teaches transmitting requests, data information and low bandwidth to satellite.

On the other hand, the Applicants teach broadcasting the requested data at predetermined intervals to simulate real time information broadcast. This limitation, in conjunction with all limitations of the independent and dependent claims, have not been disclosed, taught, or made obvious over the prior art of record.

Applicants note that the prior art of record and not relied upon is considered pertinent to Applicants' disclosure with the Examiner citing Hassan

et al (U.S. Patent No. 5,914,942) which teaches satellite communication system with dual mode bandwidth control. Applicants respectfully submit that since Hassan has not been specifically applied, no further comment is deemed necessary with regard to same.

Applicants respectfully submit that newly added claims 32 and 33 embrace all of the limitations as required by the Examiner in claims 23 and 24 and accordingly they are allowable for the reasons set forth above by the Examiner.

Applicants further respectfully submit that in view of the arguments recited above with regard to Humphrey, the 35 U.S.C. 102 rejection fails, and although Humphrey and Yee et al have no basis, either express or implied, to be combined in the manner suggested by the Examiner other than Applicants' own disclosure, both references in any combination fail to render the claims obvious under 35 U.S.C. 103.

Applicants respectfully submit that in view of the above remarks and amendments all of the claims presently under prosecution, including the newly added claims, have been shown to contain patentable subject matter and to be patentably distinguishable over the art of record and accordingly respectfully request that a Notice of Allowance be issued at an early date.

Respectfully submitted,



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